CCS-3 Publications and Other Performance Indicators March 2005 to March 2006

CCS-3 Peer-Reviewed Journal Publications

I. Steinwart, D. Hush, and C. "Scovel, A classification framework for anomaly detection," *Journal of Machine Learning Research,* Vol. 6, pp. 211-232, 2005.

C. Scovel, D. Hush, C. Scovel and I. Steinwart, "Learning Rates for Density Level Detection. Analysis and Applications," Vol. 3, No. 4 (2005) 356-371.

D. Hush and C. Scovel. Concentration of the Hypergeometric Distribution, Statistics and Probability Letters, Volume 75, Issue 2, pp. 127-132, November 2005.

D. F. Martin, P. Colella, M. Anghel, F. J. Alexander, "Adaptive Mesh Refinement for Multiscale Nonequilibrium Physics," *Computing in Science and Engineering*, Vol. 7, 24-31 (2005).

K.F. Tiampo and M. Anghel, "Critical Point Theory and Space-time Pattern Formation in Precursory Seismicity," Editorial for Tectonophysics Vol. 413, Special Issue, February 2, 2006.

E. Frachtenberg, F. Petrini, J. Fernandez, S. Pakin, "STORM: Scalable Resource Management for Large-Scale Parallel Computers." To appear in IEEE Trans. on Computers, 2006.

D.J. Kerbyson, A. Hoisie, H.J. Wasserman, "Use of Predictive Performance Modeling During Large-Scale System Installation," Parallel Processing Letters, 15(4): 387-395, Dec. 2005.

D.P. Spooner, D.J. Kerbyson, "Performance Feature Identification by Comparative Trace Analysis, Future Generation Computer Systems," 22(3): 369-380, Jan. 2006.

M.M. Mathis, D.J. Kerbyson, A. Hoisie, "A Performance Model of Non-deterministic Particle Transport on Large-scale Systems," *Future Generation Computer Systems,* 22(3): 324-335, Jan. 2006.

A. Hoisie, D.J. Kerbyson, C. Mendes, D. Reed, A. Snavely, "Large-scale System Performance Modeling and Analysis," Guest editorial, *Future Generation Computer Systems*, 22(3): 291-292, Jan. 2006.

E. Frachtenberg, D.G. Feitelson, F. Petrini, J. Fernandez, "Adaptive Parallel Job Scheduling with Flexible CoScheduling," *IEEE Trans. Parallel and Distributed Systems,* 11(16): 1066-1077, Nov. 2005.

J. Beecroft, D. Addison, D. Hewson, M. McLaren, D. Roweth, F. Petrini, J. Nieplocha, QsNetII: "Defining High-Performance Network Design," *IEEE Micro* 25(4): 34-47, July/Aug. 2005.

M.M. Mathis and D.J. Kerbyson, "A General Performance Modeling of Structured and Unstructured Mesh Particle Transport Computations," *J. of Supercomputing,* 34:181-199, 2005.

D.J. Kerbyson, A. Hoisie, H.J. Wasserman, "A Performance Comparison between the Earth Simulator and other Top 5 Terascale Systems on a Characteristics ASCI Workload," *Concurrency and Computation: Practice and Experience,* 17(10):1219-1238, Aug. 2005.

S. Jiang, X. Zhang, "Making LRU Friendly to Weak Locality Workloads: A Novel Replacement Algorithm to Improve File Buffer Cache Performance," *IEEE Trans. on Computers,* 65(8): 939-952, Aug. 2005.

D.J. Kerbyson, P.W. Jones, "A Performance Model of the Parallel Ocean Program," *Int. J. High Performance Computing Applications,* 19(3): 1-16, Summer 2005.

L. Guo, S. Jiang, L. Xiao, X. Zhang, "Fast and Low Cost P2P Searching by Exploiting Localities in Peer Community and Individual Peers," *J. Parallel and Distributed Computing,* 65(6): 729-742, June 2005.

L. Arber, Scott Pakin, "The Impact of Message-Buffer Alignment on Communication Performance." Parallel Processing Letters, 15 June 2005. LA-UR 04-6066.

S. Jiang, X. Zhang. Token-Ordered LRU: An Efficient Page Replacement Policy and Implementation in Linux Systems. Performance Evaluation, 60(1-4): 5-29, May 2005.

N. Gulbahce, F. J. Alexander, G. Johnson, "Statistical Mechanics of Histories: A Cluster Monte Carlo Algorithm", to appear in Physical Review E, 2006.

J. M. Restrepo and F. J. Alexander, "Path Integral Method for Data Assimilation," submitted to Monthly Weather Review.

I. Nemenman. 2005. Fluctuation-dissipation theorem and models of learning. 2005. Neural Comput 17:2006-2033.

D. Ming, M. E. Wall. 2006. Interactions in native binding sites cause a large change in protein dynamics. J Mol Biol (in press). Preprint (pdf).

D. Ming, M. E. Wall. 2005. Allostery in a Coarse-Grained Model of Protein Dynamics. Phys Rev Lett 95:198301. Reprint (URL). Preprint (pdf). arXiv (q-bio.BM/0506031).

M.E. Wall, M.J. Dunlop, W.S. Hlavacek. 2005. Multiple functions of a feed-forward-

loop gene circuit. J Mol Biol 349:501-514. Reprint (URL); Preprint (pdf).

D. Ming, M.E. Wall. 2005. Quantifying Allosteric Effects in Proteins. Proteins 59:697-707. Preprint (pdf). Early View (html).

A. Margolin, I. Nemenman, K. Basso, U. Klein, C. Wiggins, G. Stolovitzky, R.D. Favera, and A. Califano. ARACNE: An algorithm for reconstruction of genetic networks in a mammalian cellular context. BMC Bioinformatics, 2006. (this should appear in the next issue).

C.A. Joslyn and V. Kreinovich: (2005) "Convergence Properties of an Interval Probabilistic Approach to System Reliabilility Estimation", Int. J. General Systems, v. 34:4, pp. 465-482.

S. Lin and K.Knight: (2006) "Toward deciphering the 2-D Hieroglyphic Luwian script by discovering its writing order" Artificial Intelligence v.170/4-5, Elsevier, April 2006.

M.A. Rodriguez, J. Bollen, H. Van de Sompel, "The Convergence of Digital Libraries and the Peer-Review Process" Journal of Information Science, 32(2), pp. 151-161, 2006.

P.D. Stroud, S.J. Sydoriak, J.M. Riese, J.P. Smith, S.M. Mniszewski, P.R. Romero, January 2006, "Semi-empirical power-law scaling of new infection rate to model epidemic dynamics with inhomogeneous mixing," accepted to Mathematical Biosciences, LAUR-05-7368.

K. Verspoor, [2005] "Towards a semantic lexicon for biological language processing," *Comparative and Functional Genomics,* vol. 6, issue 1-2, p. 61-66. DOI: 10.1002/cfg.451. (also LAUR 04-4967).

K.M. Verspoor, J.D. Cohn, S.M. Mniszewski, and C.A. Joslyn: "A Categorization Approach to Automated Ontological Protein Function Annotation", Protein Science, in press.

K. Verspoor, J. Cohn, C. Joslyn, S. Mniszewski, A. Rechtsteiner, L.M. Rocha, T. Simas [2005], "Protein Annotation as Term Categorization in the Gene Ontology using Word Proximity Networks," *BMC Bioinformatics*, vol 6, suppl 1. (Also LAUR 04-3934).

CCS-3 Books and Book Chapters

J. Fernandez, F. Petrini, E. Frachtenberg. Achieving Predictable and Scalable Performance with BCS-MPI. In Beniamino Di Martino, Jack Dongarra, Adolfy Hoisie, Laurence T. Yang, Hans Zima (eds.): Engineering the Grid: Status and Perspective, To appear 2005.

C. Joslyn: (2004) “Poset Ontologies and Concept Lattices as Semantic Hierarchies”, in: Conceptual Structures at Work, Lecture Notes in Artificial Intelligence, v. 3127, ed. Wolff, Pfeiffer and Delugach, pp.~287-302, Springer-Verlag, Berlin.

C. Joslyn and J. Booker: (2005) “Generalized Information Theory for Engineering Modeling and Simulation”, in: Engineering Design Reliability Handbook, ed. E Nikolaidis et al., pp. 9:1-40, CRC Press.

C. Joslyn and W. J. Bruno: (2005) “Weighted Pseudo-Distances for Categorization in Semantic Hierarchies”, to appear in: 2005 Int. Conference on Conceptual Structures, Lecture Notes in Artificial Intelligence.

A.G. Percus, G. Istrate and C. Moore, “Introduction: Where statistical physics meets computation,” in: A.G. Percus, G. Istrate and C. Moore, eds., Computational Complexity and Statistical Physics (Oxford University Press, New York, 2005), pp. 3-24.

A.G. Percus, G. Istrate and C. Moore, eds., Computational Complexity and Statistical Physics (Oxford University Press, New York, 2005).

M. Anghel, “Critical point theory and space-time pattern formation in precursory seismicity”, Special Issue, Tectonophysics (413), Issue 1, 2 Februrary 2006.

J. Fernandez, F. Petrini, E. Frachtenberg, “Achieving Predictable and Scalable Performance with BCS-MPI,” In B. Di Martino, J. Dongarra, A. Hoisie, L.T. Yang, H. Zima (eds.): Engineering the Grid: Status and Perspective, 2006.

B. Di Martino, J. Dongarra, A. Hoisie, L.T. Yang, H. Zima (eds.), “Engineering the Grid: Status and Perspective,” American Scientific Publishers, Jan. 2006, ISBN 1-58883-038-1.

D. Feitelson, E. Frachtenberg, L. Rudolph, U. Schwiegelshohn (eds.). Job Scheduling Strategies for Parallel Processing: 11th Int. Workshop (JSSPP’05), Revised Selected Papers (Lecture Notes in Computer Science), Springer-Verlag, Dec. 2005. ISBN 3-540-31024-X.

C.A. Joslyn and W.J. Bruno: (2005) “Weighted Pseudo-Distances for Categorization in Semantic Hierarchies”, in: Conceptual Structures: Common Semantics for Sharing Knowledge, Lecture Notes in AI, v. 3596, ed. F Dau, M-L Mugnier, and G Stumme, pp. 381-395.

C.A. Joslyn and M. Booker: (2005) “Generalized Information Theory for Engineering Modeling and Simulation”, in: Engineering Design Reliability Handbook, ed. E. Nikolaidis et al., CRC Press, pp. 9:1-40.

M.A. Rodriguez, “Nature's Magic: Synergy in Evolution and the Fate of Humankind”, written by Peter Corning, *Artificial Life* [in press], January 2006.

CCS-3 Papers Published in Conference Proceedings

A. Hoisie, D.J. Kerbyson, "A Practical Approach to Performance Analysis and Modeling of Large-Scale Systems," Half day tutorial presentation, IEEE/ACM HPCA-11, San Francisco, CA, Feb. 2005. LA-UR 05-8575.

D.J. Kerbyson, A. Hoisie, "Analysis of Wavefront Algorithms on Large-scale Two-level Heterogeneous Processing Systems," To appear in proc. 2nd Int. Workshop on Unique Chips and Systems, IEEE Int. Symposium on Performance Analysis of Systems and Software, Austin, TX, March 2006.

D.J. Kerbyson. Comparison of Very Large Scale Systems: An Application Performance Perspective Using Thousands of Processors. Keynote talk presented at Workshop on Massively Parallel Processors (WMPP), In conjunction with IPDPS, Denver, CO. Apr. 2005.

R. Srinivasan and O. Lubeck. "MonteSim: A Monte Carlo Performance Model for In-order Microarchitectures," Proceedings of the Workshop on Binary Instrumentation and Applications, held in conjunction with PACT 2005. St Louis, MO. Sep 2005.

C. Scovel and I. Steinwart, "Fast Rates for Support Vector Machines". In /Proceedings of the 18th Conference on Learning Theory (COLT 2005) http://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=3559&issue=preprint>/, Bertinoro, Italy, 2005.

I. Steinwart and C. Scovel, "Fast Rates to Bayes for Kernel Methods," In /Neural Information Processing Systems 17/, pp. 1345-1352, (2005).

I. Steinwart, Workshop on Learning Theory, Toyota Technological Institute at the University of Chicago, May 2005.

I. Steinwart, High Dimensional Probability IV, Santa Fe, June 2005.

I. Steinwart, Conference on Learning Theory (COLT), Bertinoro, Italy, June 2005.

I. Steinwart, IPAM graduate summer school, UCLA, July, 2005.

D. Hush, P. Kelly, C. Scovel and I. Steinwart, Provably Fast Algorithms for Anomaly Detection. (Presented at KDD05 Workshop on Anomaly Detection) Los Alamos National Laboratory Technical Report LA-UR-05-4367, 2005.

I. Steinwart, D. Hush, and C. Scovel, "Density Level Detection is Classification," *In Neural Information Processing Systems* 17, pp. 1337-1344, (2005).

D. Hush, Fast Algorithms for Support Vector Machines. Invited talk in UNM CS

Colloquia.

J. Hogden, P. Rubin, (2005) Blind Inversion and the Perception/Production Link, Presented at the Acoustical Society of America Conference, LA-UR-05-3028.

J. Hogden, R. Brewer, (2005) Improvements on Blind Inversion of PINEX Data (U), JOWOG 32-M, Los Alamos National Laboratory, LA-CP-05-0990.

J. Hogden, R. Fortson, P. Fasel, (2005) Image Comparison for Code Validation (U), ASC Predictive Science Committee Presentations, Oct. 12-14, LA-CP-05-1005.

A. Percus, "The Physical View of Computational Complexity", UCLA Dept. of Electrical Engineering, Sept. 13, 2005.

J Middleditch, A poster paper at the 207th Meeting of the American Astronomical Society, Wash. DC, Jan. 8-12, 2006.

J. Middleditch, “Predictable Glitches in PSR” J0537-6910 Marshall, F., E., Middleditch, J., Gotthelf, E.V., Wang, Q., D., & Zhang, W. 2005, Bull. A. A. S., 37, 4, 1468.

S. Jiang, K. Davis, F. Petrini, X. Ding, X. Zhang, “COCA: A Locality-Aware Cooperative Cache Management Protocol to Improve Network File System Performance,” To appear in proc. 26th Int. Conf. on Distributed Computing Systems (ICDCS'06), July 2006.

X. Ding, D. Nikolopoulos, S. Jiang, X. Zhang, “MESA: Reducing Cache Conflicts by Integrating Static and Run-Time Methods,” To appear in proc. IEEE Int. Symp. on Performance Analysis of Systems and Software (ISPASS'06), Austin, TX, March 2006.

D.J. Kerbyson, “A Look at Application Performance Sensitivity to the Bandwidth and Latency of Infiniband Networks,” To appear in Proc. Communication Architectures, Clusters (CAC), Rhodes, Greece, Apr. 2006.

M.M. Mathis, D.J. Kerbyson, “Dynamic Performance Prediction of an Adaptive Mesh Application,” To appear in Proc. System Management Tools for Parallel Systems (SMTPS), Rhodes, Greece, Apr. 2006.

M. Lang, G. Johnson, D.J. Kerbyson, S. Pakin, Kevin Barker, A. Hoisie, “Preliminary Analysis Performance of ASC Purple,” Presented at ASC Purple SCOPE workshop, LLNL, Jan. 2006.

E. Frachtenberg, “Process Scheduling for the Parallel Desktop,” In Proc. of the Int, Symp. on Parallel Architectures, Algorithms, and Networks (I-SPAN'05), Las Vegas, NV, Dec. 2005. LA-UR 05-0638.

S. Jiang, X. Ding, F. Chen, E. Tan, X. Zhang, “DULO: An Effective Buffer Cache Management Scheme to Exploit Both Temporal and Spatial Locality,” In Proc. USENIX Conf. on File and Storage Technologies (FAST'05), San Francisco, CA, Dec. 2005.

A. Hoisie, D.J. Kerbyson, “A Practical Approach to Performance Analysis and Modeling of Large-Scale Systems,” Full day tutorial presentation, IEEE/ACM Supercomputing, (SC’05), Seattle, WA, Nov. 2005. LA-UR 05-8575.

K.J. Barker, A. Benner, R. Hoare, A. Hoisie, A.K. Jones, D.J. Kerbyson, D. Li, R. Melhem, R. Rajamony, E. Schenfeld, S. Shao, C. Stunkel, P. Walker, “On the Feasibility of Optical Circuit Switching for High Performance Computing Systems,” In proc. IEEE/ACM Supercomputing (SC'05), Seattle, Nov. 2005.

R. Gioiosa, J. Carlos Sancho, S. Jiang, F. Petrini, K. Davis, “Transparent, Incremental Checkpointing at Kernel Level: a Foundation for Fault Tolerance for Parallel Computers,” In Proc. IEEE/ACM Supercomputing (SC'05), Seattle, WA, Nov., 2005.

E. Frachtenberg, “Pitfalls in Parallel Job Scheduling Evaluation,” Presented at NM-Tech, Las Cruces, NM, Nov. 2005.

K.J. Barker, D.J. Kerbyson, A Performance Model and Scalability Analysis of the Hycom Ocean Simulation Application. In Proc. Parallel and Distributed Computing and Systems (PDCS), IASTED, Phoenix, Nov. 14-16, 2005.

K.J. Barker, A. Hoisie, G. Johnson, D.J. Kerbyson, M. Lang, S. Pakin, “Performance Analysis and Modeling of BlueGene/L and Red Storm,” Presented at ASC L2 Milestone, Oct. 2005. LA-UR 05-8173.

J.C. Sancho, “Towards Highly Efficient, Scalable, and Transparent Fault Tolerance for Extreme-Scale Parallel Computers,” Presented at Workshop on Performance and Productivity of Extreme-Scale Parallel, LACSI, Santa Fe, NM, Oct., 2005.

D.J. Kerbyson, K.J. Barker, “Automatic Identification of Application Communication Patterns via Templates,” In Proc. 18th Int. Conf. on Parallel and Distributed Computing Systems (PDCS-2005), Las Vegas, NV, Sept. 2005.

K. Davis, J. Carlos Sancho, S. Jiang, “Self-Healing High-Performance Parallel Computers,” Presented at LDRD ER review, Sept. 2005.

D.J. Kerbyson, K.J. Barker, “An Initial Performance Comparison of PERCS Direct-connect Interconnect vs. PERCS Fat-Tree,” Presented at IBM Austin, Aug. 2005.

E. Frachtenberg, D.G. Feitelson, “Pitfalls in Parallel Job Scheduling Evaluation,” In Proc. of the 11th Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP'05), In conjunction with ICS-19, Boston, MA, June 2005. LA-UR 05-3474.

S. Pakin, “Rapid Development of Application-Specific Network Performance Tests,” In Proc. Int. Conf. on Computational Science (ICCS’05), Workshop on Tools for Program Development and Analysis in Computational Science, Atlanta, GA, pp. 149-157, June, 2005.

J.C. Sancho, F. Petrini, K. Davis, R. Gioiosa, S. Jiang, “Current Practice and a Direction Forward in Checkpoint/Restart Implementations for Fault Tolerance,” In Proc. 1st Workshop on System Management Tools for Large-Scale Parallel Systems (SMTPS), Int. Parallel and Distributed Processing Symposium, Denver, CO, April, 2005.

E. Frachtenberg, “SchedMark. Evaluating Scheduler Performance,” Work-in-Progress, Usenix Annual Technical Conference (USENIX'05), Anaheim, CA, Apr. 2005.

J. Fernandez, F. Petrini, E. Frachtenberg, “Monitoring and Debugging Parallel Software with BCS-MPI on Large-Scale Clusters,” In Proc. of the First Workshop on System Management Tools for Large-Scale Parallel Systems (SMTPS'05), Denver, CO, Apr. 2005.

K.J. Barker, N. Chrisochoides, “Practical Performance Model for Optimizing Dynamic Load Balancing of Adaptive Applications,” In Proc. IEEE/ACM Int. Parallel and Distributed Processing Symposium (IPDPS’05), Denver, CO, Apr. 2005.

S. Jiang, F. Chen, X. Zhang, “CLOCK-Pro: An Effective Improvement of the CLOCK Replacement,” In Proc. USENIX Annual Technical Conference (USENIX'05), Anaheim, CA, Apr. 2005.

O. Lubeck, M. Lang, P. Mucci, R. Fowler (Organizers), “Hardware Performance Monitor Design and Functionality,” Co-organized with High Performance Computer Architecture, San Francisco, Feb. 2005.

F. J. Alexander, “Hybrid Numerical Algorithms,” Biocomplexity VIII: Applications of Methods of Stochastic Systems and Statistical Physics in Biology, University of Notre Dame, South Bend, Indiana, (October 2005).

F. J. Alexander, “Fluctuations, Entropy, and Nonequilibrium States with DSMC,” Direct Simulation Monte Carlo Theory, Methods, and Applications, Santa Fe, New Mexico, (September 2005).

F. J. Alexander, “Hybrid Numerical Methods for Multiscale Modeling,” 93rd Statistical Mechanics Conference, Rutgers University, Piscataway, New Jersey (May 2005).

M.J. Dunlop, M.E. Wall, 2005, “Robustness in Gene Circuits: Clustering of Functional Responses,” Proceedings of the 2005 American Control Conference, In Press, Preprint (q-bio.MN/0503005).

K. Wang, I. Nemenman, N. Banerjee, and A. Califano, “Genome-wide discovery of modulators of transcriptional interactions in human B lymphocytes,” to appear in RECOMB'06 proceedings.

M. E. Wall, "Protein Function Inference," Bioscience Division Seminar Series, 8/8/05, Los Alamos National Laboratory.

M. E. Wall, "Design Principles of Genetic Regulatory Networks," Colloquium, 5/21/05, Department of Microbiology and Immunology, University of Otago, Dunedin, New Zealand.

K. Eggert, E. Beighley, T. Dunne, L. Mertes, K. Verdin, and S. Mniszewski, March 2005, “Application of a Continental Scale River Modeling Framework to the Purus River Basin - a major tributary of the Amazon River,” NCAR CCSM Land Working Group Meeting.

C.A. Joslyn, K.M. Verspoor, J.D. Cohn, and S.M. Mniszewski: (2005) “Mathematical Techniques for Predicting and Analyzing Ontological Protein Function Annotations”, 3rd Annual Rocky Mountain Regional Bioinformatics Conf. (Rocky 05), 2005.

C.A. Joslyn, J.D. Cohn, K.M. Verspoor, and S.M. Mniszewski: (2005) “Automating Ontological Function Annotation: Towards a Common Methodological Framework,” poster presentation at Bio-Ontologies SIG, ISMB 05.

C.A. Joslyn, S.M. Mniszewski, K.M. Verspoor, and J.D. Cohn: (2005) “Improved Order Theoretical Techniques for GO Functional Annotation,” poster presentation at Intelligent Systems for Molecular Biology (ISMB 05).

A. Maguitman, A. Rechtsteiner, K. Verspoor, C.E. Strauss, L. Rocha, [2006] “Linking Biomedical Information through Text Mining,” Pacific Symposium on Biocomputing 11:76-87.

K.M. Verspoor, J. Cohn, S.M. Mniszewski, and C.A. Joslyn: (2005) “Nearest Neighbor Categorization for Function Prediction,” in: Proc. 5th Community Wide Experiment on the Critical Assessment of Techniques for Protein Structure Prediction (CASP 05).

K.M. Verspoor, J.D. Cohn, S.M. Mniszewski, and C.A. Joslyn: (2005) “Nearest Neighbor Categorization for CASP Function Prediction,” poster presentation at Intelligent Systems for Molecular Biology (ISMB 05).

K.M. Verspoor, J.D. Cohn, S.M. Mniszewski, and C.A. Joslyn: “POSOLE: Automated Ontological Annotation for Function Prediction,” in: Proc. Automated Function Prediction SIG, ISMB 05.

E. Vivoni, S. Mnizewski, P. Fasel, E. Springer, V.Y. Ivanov, and R.L. Bras, December 2005, “Parallelization of a Fully-Distributed Hydrological Model using Sub-basin Partitioning,” American Geological Union Fall Meeting 2005, poster, LA-UR-05-9604.

Rodriguez, M.A., Bollen, J., Van de Sompel, H., “An Analysis of the Bid Behavior of the 2005 JCDL Program Committee”, Proceedings of the 2006 Joint Conference on Digital Libraries, [in press], 2006.

CCS-3 Invited Presentations at Professional Meetings

A. Hoisie, “Performance Analysis and Modeling in Action”, Half Day Tutorial for Federal Program Managers, January 2005, Washington, DC.

A. Hoisie, “Performance Modeling for Large-Scale Systems”, Invited Lecture at NASA Ames, March 2005, Mountain View, CA.

A. Hoisie, “Performance Modeling and Prediction of Future High-Productivity Computer Systems”, 2005 International Conference on Automatics and Informatics, October 2005, Sofia, Bulgaria.

A. Hoisie, “System Architecture Design at Extreme-Scale Using Predictive Performance Models”, ScalPerf’05, October 2005, Bertinoro, Italy.

A. Hoisie, “System Architecture Design Using Performance Models”, April 2005, Salishan, Oregon.

A. Hoisie, “Performance Modeling of Extreme-Scale Systems and Applications”, Computational Engineering and Science Conference (CESC) 2005, April 2005, Washington, DC.

A. Hoisie, “Performance analysis and Modeling”, Distinguished Lecture in Computer Science at Iowa State University, February 2005, Ames, Iowa.

A. Hoisie, “Advanced Architectures,” ASC PI Meeting, march 2005, San Antonio, Texas.

M. E. Wall, "Computational Models of Biochemical Regulation," 13th International Conference on Microbial Genomes, 9/11/05-9/15/05, Madison, Wisconsin.

M. E. Wall, "Principles of Biochemical Regulation," 2d International Conference of the Institute for Biocomputation and Physics of Complex Systems, From Physics to Biology: The Interface between Experiment and Computation, 2/8/06-2/11/06, Zaragoza, Spain.

C. Joslyn, CCS-3: “Order Theoretical Knowledge Discovery for Homeland Defense”, Second Conference on Mathematical Methods for Counterterrorism, Benedict College, Columbia, South Carolina, November, 2005.

C. Joslyn, CCS-3: “Poset Metric Approaches to the Management of Large Semantic Hierarchies”, Computer Science Department, University of Manchester, July, 2005.

C. Joslyn, CCS-3: "Management of Quantified Semantic Taxonomies for Biothreat Response", DIMACS Working Group on Order-Theoretic Aspects of Epidemiology, Rutgers University, March, 2005.

S. Lin, CCS-3: "Unsupervised Frameworks for Machine Discovery in Complex Semantic Networks and Natural Languages", Turing talk at University of Washington, February, 2006.

M. Rodriguez, CCS-3: "An OAI Repository-Centric Peer-Review Model", CERN Workshop on Innovations in Scholarly Communication (OAI4), Geneva, Switzerland, October 2005.

CCS-3 Classified & Unclassified Reports

CCS-3 Unclassified Reports

S.Y. Del Valle, S. Mniszewski, J. Riese, J.P. Smith, P. Stroud, and S. Sydoriak, December 2005, Joint NISAC - CIP/DSS Analysis of Avian Influenza Virus Issues for the Catastrophic Assessment Task Force (CATF) Table-top Exercise, LA-UR-05-9254.

C. Joslyn, K. Verspoor, S. Mniszewski, and J. Cohn, January 2005, Automated Protein Function Annotation Via Markov Adjusted Ontology Categorization, LA-UR-05-0639.

P.D. Stroud, S.Y. Del Valle, D. Kubicek, S.M. Mniszewski, J.M.Riese, P.R. Romero, J.P. Smith, S.J. Sydoriak, January 2006, EpiSimS Los Angeles Case Study, Report to DHS, LAUR-06-0666.

K.M. Verspoor, C.A. Joslyn, J.A. Ambrosiano, A. Backer, O. Bodenreider, L. Hirschman, P. Karp, H. Kelly, S. Loranger, M. Musen. R. Sriram, and C. Wroe: (2005) "Knowledge Integration for Biothreat Response", LAUR 05-0907.

Ram Srinivasan, Jeanine Cook and Olaf Lubeck, "A Monte Carlo Model Performance Model for In-order Microarchitectures: Decomposing Processor Stalls" submitted to "Computer Architecture Letters."

I. Steinwart, "How to compare different loss functions and their risks". Los Alamos National Laboratory Technical Report LA-UR-05-7016, submitted for publication, 2005.

D. Hush, P. Kelly, C. Scovel and I. Steinwart, "Provably Fast Algorithms for Anomaly Detection". Los Alamos National Laboratory Technical Report LA-UR-05-4367, 2005.

I. Steinwart, D. Hush, and C. Scovel, "A new concentration result for regularized risk minimizers", Los Alamos National Laboratory Technical Report LA-UR-05-9403, submitted for publication, 2005.

D. Hush and J. Howse, Anomaly Detection on Graphs. Los Alamos National Laboratory Technical Report LA-UR-05-8440, 2005.

D. Hush, C. Scovel, and I. Steinwart, Polynomial Time Algorithms for Computing Approximate SVM Solutions with Guaranteed Accuracy. Los Alamos National Laboratory Technical Report LA-UR-05-7738, 2005.

C. Scovel, D. Hush, and I. Steinwart, Approximate duality. Los Alamos National Laboratory Technical Report LA-UR-05-6755.

D. Hush, P. Kelly, C. Scovel and I. Steinwart, QP Algorithms with Guaranteed Accuracy and Run Time for Support Vector Machines. Los Alamos National Laboratory Technical Report LA-UR-05-5165.

M. Cannon, R. Coker, K. Fisher, R. Fortson, J. Hogden, T. Warnock, B. Wilde, J. Kamm, T. Perry, P. Rosen, (2005) Image Quantification of Experiments and Simulations of Laser-Driven Supersonic Jets, LA-UR-05-1441.

J. Hogden, (2005), Image Comparisons for Code Validation, Contribution to Level 2 Primary Hydrocode Milestone, LA-CP-05-0585.

J .Hogden, P. Fasel, & R. Fortson, P. Kelly, (2005) Appendix E of the 2005 ASC Secondary V&V Milestone (U).

A. Percus, A. Arsie and E. Frazzoli, "Improved Asymptotic Bounds on Non-Holonomic Vehicle Circuit Paths" (in preparation: no LA-UR yet).

K.J. Barker, D.J. Kerbyson. Analysis of a Generic Workload on Alternative PERCS Super-Node Configurations, Feb. 2006.

K.J. Barker, A. Hoisie, G. Johnson, D.J. Kerbyson, M. Lang, S. Pakin, "A Preliminary Performance Analysis of Sage on Purple," Jan. 2006, LA-UR 06-0702.

D.J. Kerbyson, K.J. Barker, Analysis of Representative DARPA HPCS and DOE Workloads on the proposed IBM PERCS Architecture at Large-Scale, Dec. 2005.

D.J. Kerbyson, "An Initial Analysis of Sweep3D on the Clearspeed CSX600," Oct. 2005, LA-CP-05-1237.

K.J. Barker, S. Pakin, D.J. Kerbyson, “Performance Model and Analysis of LANL's KRAK Hydrodynamics Application,” Sept. 2005.

K.J. Barker, A. Hoisie, G. Johnson, D.J. Kerbyson, M. Lang, S. Pakin, “Current Status of Red Storm: Performance Results for ASC L2 Milestone,” Sept. 2005. LA-UR 05-7435.

K.J. Barker, A. Hoisie, G. Johnson, D.J. Kerbyson, M. Lang, S. Pakin, “Current Status of BlueGene/L: Performance Results for the ASC L2 Milestone,” Sept. 2005. LA-UR 05-7434.

D.J. Kerbyson, K.J. Barker, S. Pakin, A. Hoisie, “An Initial Analysis of Application Communication Requirements for a Hybrid Optical Circuit Switch Network,” June 2005, LA-CP 05-0765.

D.J. Kerbyson, K.J. Barker. A Note on Application Communication Requirements, June 2005. LA-UR 05-4543.

P. Sweeney, O. Lubeck, M. Lang, R. Fowler, G. Johnson, G. Marin, “Summary White Paper: Hardware Performance Monitor Design and Function,” May 2005.

G. Johnson, M. Lang, D.J. Kerbyson, A. Hoisie, “Report on Dual-Core Opterons: Nodes and Clusters,” May 2005, LA-UR 05-3388.

S. Pakin, “Porting a C program to conceptual,” LA-UR 05-0672.

S. Pakin, “The Design and Implementation of a Domain-Specific Language for Network Performance Testing,” LA-UR 06-0398.

A. Hoisie, S. Pakin, D.J. Kerbyson, “Performance Modeling of a 2010-era ASC Supercomputer” (U), LA-CP 05-0172.

A. Hoisie, D.J. Kerbyson, K.J. Barker, “Large-Scale Performance Modeling of PERCS, Presented at IBM Austin, Feb. 2005. LA-UR 05-0276.

A. Hoisie. D.J. Kerbyson, K.J. Barker, S. Pakin, M. Lang, G. Johnson, “Performance Modeling in Perspective,” Jan. 2005, LAUR 05-0276.

CCS-3 Participation on Review and Advisory Committees

C. Joslyn, CCS-3: Dept. of Homeland Security, Institute for Discrete Sciences, University Affiliate Centers.

C. Joslyn, CCS-3: National Science Foundation, Science and Engineering Information Integration and Informatics (SEIII) Program, April, 2005.

C. Joslyn, CCS-3: DARPA Workshop on Computable Semantics for Complex Biological Systems, March, 2005.

CCS-3 Editorships of Professional Journals & Memberships on Editorial Advisory Boards

C. Joslyn, CCS-3: Int. J. General Systems.

C. Joslyn, CCS-3: J. of Biosemiotics.

C. Joslyn, CCS-3: Advances in Complex Systems.

CCS-3 Professional Honors, Awards, and Elections to National Scientific and Engineering Societies

D.J. Kerbyson. Los Alamos Personal Achievement Award, July 2005.

S. Mniszewski, CCS-3: Los Alamos Award Program (LAAP), (August 2005) for work on NISAC Los Angeles Avian Flu Study.

CCS-3 Adjunct Appointments by School (currently active appointments)

K. Verspoor, CCS-3: New Mexico State University, Department of Communication Studies, 7/1/05-4/30/06.

CCS-3 External Reviews of Programs and Projects

M. E. Wall, "Structure and Function of Genetic Regulatory Networks in E. Coli," CNLS external review, 2/25/05, LANL

M. E. Wall, "Structural Bioinformatics LDRD," UC S&T review panel of LDRD programs at Livermore and LANL, 4/22/05, LANL. (One of a handful of LANL LDRD projects selected for presentation).

M. E. Wall, "Biochemical Reaction Kinetics," FPGA LDRD review, 7/27/05, LANL.

M. E. Wall, "Los Alamos Structural Bioinformatics," DOE Annual Tri- Lab Review of Research Programs, 8/24/05, Livermore, CA. (One of five LANL projects selected for presentation).

C. Joslyn, CCS-3: Organizing Committee, Workshop on Machine Self-Replication, 10th International Conference on the Simulation and Synthesis of Living Systems (ALife X), Bloomington, Indiana, June, 2006.

C. Joslyn, CCS-3: Workshop on the Semantic Web for the Life Sciences, 2006 Pacific Symposium on Biocomputing (PSB 06), Hawaii, January, 2006.

C. Joslyn, CCS-3: DHS Institute for Discrete Sciences (IDS) Workshop on Data Integration and Dissemination, Washington, DC, November, 2005.

C. Joslyn, CCS-3: Fourth European Conference on Computational Biology (ECCB 05), Madrid, September, 2005.

C. Joslyn, CCS-3: 2005 Conference on Intelligent Systems for Molecular Biology (ISMB 05), Detroit, Michigan, July, 2005.

C. Joslyn, CCS-3: 2005 International Conference on Human-Computer Interface Advances for Modeling and Simulation (SIMCHI 05).

C. Joslyn, CCS-3: 2005 IEEE International Conference on Systems, Man, and Cybernetics, Hawaii, October, 2005.

K. Verspoor, CCS-3: Sixth International Conference on Intelligent Text Processing and Computational Linguistics (CICLING'05).

K. Verspoor, CCS-3: BioLINK text mining Special Interest Group meeting (at ISMB 2005).

K. Verspoor, CCS-3: ECCB'05 (European Conference on Computational Biology) Workshop on Biomedical Ontologies and Text Processing.

K. Verspoor, CCS-3: Recent Advances in Natural Language Processing 2005.

K. Verspoor, CCS-3: Pacific Symposium on Biocomputing 2006, Text mining session.

K. Verspoor, CCS-3: International Workshop on Knowledge Discovery in Life Science Literature (KDLL 2006).